

ABSTRACT OF THE DISCLOSURE

A cyclone is used to collect nanoparticles and is formed of a chamber, and a guide wing located in the chamber such that the guide wing and the chamber form a passage. A flow entraining the nanoparticles is moved through the passage in such a way that the flow is caused to spin rapidly, and that the nanoparticles, acted on by a centrifugal force, are thereby resulting in collision with the chamber wall. The cyclone has a nanoparticle cut-off aerodynamic diameter, which is reduced by virtue of the phenomena that the particle inertia increases in a low pressure environment, and that the particle slipping correction factor increases under low pressure, and that the rebound of the particle in the cyclone chamber tends to alleviate under low pressure. The cyclone is used to remove nanoparticles from industrial exhaust fumes.